

SEQUENCE LISTING

<110> Conjuchem, Inc.

<120> LONG LASTING FUSION PEPTIDE INHIBITORS OF VIRAL  
INFECTION

<130> REDC-1510

<140>

<141>

<150> US 60/134,406

<151> 1999-05-17

<150> US 60/153,406

<151> 1999-09-10

<160> 86

<170> PatentIn Ver. 2.1

<210> 1

<211> 36

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide

<400> 1

Tyr Thr Ser Leu Ile His Ser Leu Ile Glu Glu Ser Gln Asn Gln Gln  
1 5 10 15

Glu Lys Asn Gln Gln Glu Leu Leu Glu Leu Asp Lys Trp Ala Ser Leu  
20 25 30

Trp Asn Trp Phe  
35

<210> 2

<211> 38

<212> PRT

<213> Artificial Sequence

<220>

005050" EEE2960

<223> Description of Artificial Sequence: synthetic peptide

<400> 2

Asn Asn Leu Leu Arg Ala Ile Glu Ala Gln Gln His Leu Leu Gln Leu  
1 5 10 15

Thr Val Trp Gln Ile Lys Gln Leu Gln Ala Arg Ile Leu Ala Val Glu  
20 25 30

Arg Tyr Leu Lys Asp Gln  
35

<210> 3

<211> 36

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide

<400> 3

Tyr Thr Asn Thr Ile Tyr Thr Leu Leu Glu Glu Ser Gln Asn Gln Gln  
1 5 10 15

Glu Lys Asn Glu Gln Glu Leu Leu Glu Leu Asp Lys Trp Ala Ser Leu  
20 25 30

Trp Asn Trp Phe  
35

<210> 4

<211> 36

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide

<400> 4

Tyr Thr Gly Ile Ile Tyr Asn Leu Leu Glu Glu Ser Gln Asn Gln Gln  
1 5 10 15

Glu Lys Asn Glu Gln Glu Leu Leu Glu Leu Asp Lys Trp Ala Asn Leu

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20

25

30

Trp Asn Trp Phe  
35

<210> 5  
<211> 36  
<212> PRT  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide

<400> 5

Tyr Thr Ser Leu Ile Tyr Ser Leu Leu Glu Lys Ser Gln Thr Gln Gln  
1 5 10 15

Glu Lys Asn Glu Gln Glu Leu Leu Glu Leu Asp Lys Trp Ala Ser Leu  
20 25 30

Trp Asn Trp Phe  
35

<210> 6  
<211> 36  
<212> PRT  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide

<400> 6

Leu Glu Ala Asn Ile Ser Lys Ser Leu Glu Gln Ala Gln Ile Gln Gln  
1 5 10 15

Glu Lys Asn Met Tyr Glu Leu Gln Lys Leu Asn Ser Trp Asp Ile Phe  
20 25 30

Gly Asn Trp Phe  
35

<210> 7  
<211> 36

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide

<400> 7

Leu Glu Ala Asn Ile Ser Gln Ser Leu Glu Gln Ala Gln Ile Gln Gln  
1 5 10 15

Glu Lys Asn Met Tyr Glu Leu Gln Lys Leu Asn Ser Trp Asp Val Phe  
20 25 30

Thr Asn Trp Leu  
35

<210> 8

<211> 41

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide

<400> 8

Cys Gly Gly Asn Asn Leu Leu Arg Ala Ile Glu Ala Gln Gln His Leu  
1 5 10 15

Leu Gln Leu Thr Val Trp Gly Ile Lys Gln Leu Gln Ala Arg Ile Leu  
20 25 30

Ala Val Glu Arg Tyr Leu Lys Asp Gln  
35 40

<210> 9

<211> 38

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide

<400> 9

Gln Gln Leu Leu Asp Val Val Lys Arg Gln Gln Glu Met Leu Arg Leu  
1 5 10 15

Thr Val Trp Gly Thr Lys Asn Leu Gln Ala Arg Val Thr Ala Ile Glu  
20 25 30

Lys Tyr Leu Lys Asp Gln  
35

<210> 10

<211> 46

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide

<400> 10

Tyr Thr Ser Val Ile Thr Ile Glu Leu Ser Asn Ile Lys Glu Asn Lys  
1 5 10 15

Cys Asn Gly Ala Lys Val Lys Leu Ile Lys Gln Glu Leu Asp Lys Tyr  
20 25 30

Lys Asn Ala Val Thr Glu Leu Gln Leu Leu Met Gln Ser Thr  
35 40 45

<210> 11

<211> 54

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide

<400> 11

Ala Ser Gly Val Ala Val Ser Lys Val Leu His Leu Glu Gly Glu Val  
1 5 10 15

Asn Lys Ile Ala Leu Leu Ser Thr Asn Lys Ala Val Val Ser Leu Ser  
20 25 30

Asn Gly Val Ser Val Leu Thr Ser Lys Val Leu Asp Leu Lys Asn Tyr  
35 40 45

Ile Asp Lys Gln Leu Leu  
50

<210> 12

<211> 53

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide

<400> 12

Gly Glu Pro Ile Ile Asn Phe Tyr Asp Pro Leu Val Phe Pro Ser Asp  
1 5 10 15

Glu Phe Asp Ala Ser Ile Ser Gln Val Asn Glu Lys Ile Asn Gln Ser  
20 25 30

Leu Ala Phe Ile Arg Lys Ser Asp Glu Leu Leu His Asn Val Asn Ala  
35 40 45

Gly Lys Ser Thr Thr  
50

<210> 13

<211> 48

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide

<400> 13

Tyr Thr Ser Val Ile Thr Ile Glu Leu Ser Asn Ile Lys Glu Asn Lys  
1 5 10 15

Cys Asn Gly Thr Asp Ala Lys Val Lys Leu Ile Lys Gln Glu Leu Asp  
20 25 30

Lys Tyr Lys Asn Ala Val Thr Glu Leu Gln Leu Leu Met Gln Ser Thr  
35 40 45

<210> 14  
<211> 34  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide

<400> 14  
Tyr Thr Ser Val Ile Thr Ile Glu Leu Ser Asn Ile Lys Glu Asn Lys  
1 5 10 15

Cys Asn Gly Asp Ala Lys Val Lys Leu Ile Lys Gln Glu Leu Asp Lys  
20 25 30

Tyr Lys

<210> 15  
<211> 34  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide

<400> 15  
Thr Ser Val Ile Thr Ile Glu Leu Ser Asn Ile Lys Glu Asn Lys Cys  
1 5 10 15

Asn Gly Asp Ala Lys Val Lys Leu Ile Lys Gln Glu Leu Asp Lys Tyr  
20 25 30

Lys Asn

<210> 16  
<211> 34  
<212> PRT  
<213> Artificial Sequence





Ala Leu Leu Ser Thr Asn Lys Ala Val Val Ser Leu Ser Asn Gly Val  
20 25 30

Ser

<210> 19

<211> 33

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide

<400> 19

Ala Val Ser Lys Val Leu His Leu Glu Gly Glu Val Asn Lys Ile Ala  
1 5 10 15

Leu Leu Ser Thr Asn Lys Ala Val Val Ser Leu Ser Asn Gly Val Ser  
20 25 30

Val

<210> 20

<211> 33

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide

<400> 20

Val Ser Lys Val Leu His Leu Glu Gly Glu Val Asn Lys Ile Ala Leu  
1 5 10 15

Leu Ser Thr Asn Lys Ala Val Val Ser Leu Ser Asn Gly Val Ser Val  
20 25 30

Leu

<210> 21

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<211> 33  
<212> PRT  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide

<400> 21

Ser Lys Val Leu His Leu Glu Gly Glu Val Asn Lys Ile Ala Leu Leu  
1 5 10 15

Ser Thr Asn Lys Ala Val Val Ser Leu Ser Asn Gly Val Ser Val Leu  
20 25 30

Thr

<210> 22  
<211> 33  
<212> PRT  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide

<400> 22

Lys Val Leu His Leu Glu Gly Glu Val Asn Lys Ile Ala Leu Leu Ser  
1 5 10 15

Thr Asn Lys Ala Val Val Ser Leu Ser Asn Gly Val Ser Val Leu Thr  
20 25 30

Ser

<210> 23  
<211> 33  
<212> PRT  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide

<400> 23

Leu Glu Gly Glu Val Asn Lys Ile Ala Leu Leu Ser Thr Asn Lys Ala  
1 5 10 15

Val Val Ser Leu Ser Asn Gly Val Ser Val Leu Thr Ser Lys Val Leu  
20 25 30

Asp

<210> 24

<211> 33

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: synthetic  
peptide

<400> 24

Gly Glu Val Asn Lys Ile Ala Leu Leu Ser Thr Asn Lys Ala Val Val  
1 5 10 15

Ser Leu Ser Asn Gly Val Ser Val Leu Thr Ser Lys Val Leu Asp Leu  
20 25 30

Lys

<210> 25

<211> 33

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide

<400> 25

Glu Val Asn Lys Ile Ala Leu Leu Ser Thr Asn Lys Ala Val Val Ser  
1 5 10 15

Leu Ser Asn Gly Val Ser Val Leu Thr Ser Lys Val Leu Asp Leu Lys  
20 25 30

Asn

<210> 26  
<211> 33  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide

<400> 26  
Val Asn Lys Ile Ala Leu Leu Ser Thr Asn Lys Ala Val Val Ser Leu  
1 5 10 15

Ser Asn Gly Val Ser Val Leu Thr Ser Lys Val Leu Asp Leu Lys Asn  
20 25 30

Tyr

<210> 27  
<211> 33  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide

<400> 27  
Asn Lys Ile Ala Leu Leu Ser Thr Asn Lys Ala Val Val Ser Leu Ser  
1 5 10 15

Asn Gly Val Ser Val Leu Thr Ser Lys Val Leu Asp Leu Lys Asn Tyr  
20 25 30

Ile

<210> 28  
<211> 33  
<212> PRT  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide

<400> 28

Lys Ile Ala Leu Leu Ser Thr Asn Lys Ala Val Val Ser Leu Ser Asn  
1 5 10 15

Gly Val Ser Val Leu Thr Ser Lys Val Leu Asp Leu Lys Asn Tyr Ile  
20 25 30

Asp

<210> 29

<211> 33

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide

<400> 29

Ile Ala Leu Leu Ser Thr Asn Lys Ala Val Val Ser Leu Ser Asn Gly  
1 5 10 15

Val Ser Val Leu Thr Ser Lys Val Leu Asp Leu Lys Asn Tyr Ile Asp  
20 25 30

Lys

<210> 30

<211> 33

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide

<400> 30

Ala Leu Leu Ser Thr Asn Lys Ala Val Val Ser Leu Ser Asn Gly Val  
1 5 10 15

Ser Val Leu Thr Ser Lys Val Leu Asp Leu Lys Asn Tyr Ile Asp Lys  
 20 25 30

Gln

<210> 31

<211> 70

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
 peptide

<400> 31

Gly Thr Ile Ala Leu Gly Val Ala Thr Ser Ala Gln Ile Thr Ala Ala  
 1 5 10 15

Val Ala Leu Val Glu Ala Lys Gln Ala Arg Ser Asp Ile Glu Lys Leu  
 20 25 30

Lys Glu Ala Ile Arg Asp Thr Asn Lys Ala Val Gln Ser Val Gln Ser  
 35 40 45

Ser Ile Gly Asn Leu Ile Val Ala Ile Lys Ser Val Gln Asp Tyr Val  
 50 55 60

Asn Lys Glu Ile Val Pro  
 65 70

<210> 32

<211> 56

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
 peptide

<400> 32

Tyr Thr Pro Asn Asp Ile Thr Leu Asn Asn Ser Val Ala Leu Asp Pro  
 1 5 10 15

Ile Asp Ile Ser Ile Glu Leu Asn Lys Ala Lys Ser Asp Leu Glu Glu  
 20 25 30

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Ser Lys Glu Trp Ile Arg Arg Ser Asn Gln Lys Leu Asp Ser Ile Gly  
35 40 45

Asn Trp His Gln Ser Ser Thr Thr  
50 55

<210> 33

<211> 35

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide

<400> 33

Thr Leu Asn Asn Ser Val Ala Leu Asp Pro Ile Asp Ile Ser Ile Glu  
1 5 10 15

Leu Asn Lys Ala Lys Ser Asp Leu Glu Glu Ser Lys Glu Trp Ile Arg  
20 25 30

Arg Ser Asn  
35

<210> 34

<211> 35

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide

<400> 34

Leu Asn Asn Ser Val Ala Leu Asp Pro Ile Asp Ile Ser Ile Glu Leu  
1 5 10 15

Asn Lys Ala Lys Ser Asp Leu Glu Glu Ser Lys Glu Trp Ile Arg Arg  
20 25 30

Ser Asn Gln  
35

<210> 35  
<211> 35  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide

<400> 35  
Asn Asn Ser Val Ala Leu Asp Pro Ile Asp Ile Ser Ile Glu Leu Asn  
1 5 10 15  
Lys Ala Lys Ser Asp Leu Glu Glu Ser Lys Glu Trp Ile Arg Arg Ser  
20 25 30  
Asn Gln Lys  
35

<210> 36  
<211> 35  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide

<400> 36  
Asn Ser Val Ala Leu Asp Pro Ile Asp Ile Ser Ile Glu Leu Asn Lys  
1 5 10 15  
Ala Lys Ser Asp Leu Glu Glu Ser Lys Glu Trp Ile Arg Arg Ser Asn  
20 25 30  
Gln Lys Leu  
35

<210> 37  
<211> 35  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide



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<400> 37

Ser Val Ala Leu Asp Pro Ile Asp Ile Ser Ile Glu Leu Asn Lys Ala  
1 5 10 15

Lys Ser Asp Leu Glu Glu Ser Lys Glu Trp Ile Arg Arg Ser Asn Gln  
20 25 30

Lys Leu Asp  
35

<210> 38

<211> 35

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide

<400> 38

Val Ala Leu Asp Pro Ile Asp Ile Ser Ile Glu Leu Asn Lys Ala Lys  
1 5 10 15

Ser Asp Leu Glu Glu Ser Lys Glu Trp Ile Arg Arg Ser Asn Gln Lys  
20 25 30

Leu Asp Ser  
35

<210> 39

<211> 35

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide

<400> 39

Ala Leu Asp Pro Ile Asp Ile Ser Ile Glu Leu Asn Lys Ala Lys Ser  
1 5 10 15

Asp Leu Glu Glu Ser Lys Glu Trp Ile Arg Arg Ser Asn Gln Lys Leu  
20 25 30

Asp Ser Ile  
35

<210> 40  
<211> 35  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide

<400> 40  
Leu Asp Pro Ile Asp Ile Ser Ile Glu Leu Asn Lys Ala Lys Ser Asp  
1 5 10 15  
Leu Glu Glu Ser Lys Glu Trp Ile Arg Arg Ser Asn Gln Lys Leu Asp  
20 25 30  
Ser Ile Gly  
35

<210> 41  
<211> 35  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide

<400> 41  
Asp Pro Ile Asp Ile Ser Ile Glu Leu Asn Lys Ala Lys Ser Asp Leu  
1 5 10 15  
Glu Glu Ser Lys Glu Trp Ile Arg Arg Ser Asn Gln Lys Leu Asp Ser  
20 25 30  
Ile Gly Asn  
35

<210> 42  
<211> 35  
<212> PRT  
<213> Artificial Sequence

005060" E2526950

005050" EEE22960

<220>

<223> Description of Artificial Sequence: synthetic peptide

<400> 42

Pro Ile Asp Ile Ser Ile Glu Leu Asn Lys Ala Lys Ser Asp Leu Glu  
1 5 10 15

Glu Ser Lys Glu Trp Ile Arg Arg Ser Asn Gln Lys Leu Asp Ser Ile  
20 25 30

Gly Asn Trp  
35

<210> 43

<211> 35

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide

<400> 43

Ile Asp Ile Ser Ile Glu Leu Asn Lys Ala Lys Ser Asp Leu Glu Glu  
1 5 10 15

Ser Lys Glu Trp Ile Arg Arg Ser Asn Gln Lys Leu Asp Ser Ile Gly  
20 25 30

Asn Trp His  
35

<210> 44

<211> 35

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide

<400> 44

Asp Ile Ser Ile Glu Leu Asn Lys Ala Lys Ser Asp Leu Glu Glu Ser  
1 5 10 15

Lys Glu Trp Ile Arg Arg Ser Asn Gln Lys Leu Asp Ser Ile Gly Asn  
20 25 30

Trp His Gln  
35

<210> 45

<211> 35

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide

<400> 45

Ile Ser Ile Glu Leu Asn Lys Ala Lys Ser Asp Leu Glu Glu Ser Lys  
1 5 10 15

Glu Trp Ile Arg Arg Ser Asn Gln Lys Leu Asp Ser Ile Gly Asn Trp  
20 25 30

His Gln Ser  
35

<210> 46

<211> 35

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide

<400> 46

Ser Ile Glu Leu Asn Lys Ala Lys Ser Asp Leu Glu Glu Ser Lys Glu  
1 5 10 15

Trp Ile Arg Arg Ser Asn Gln Lys Leu Asp Ser Ile Gly Asn Trp His  
20 25 30

Gln Ser Ser  
35

<210> 47  
<211> 35  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide

<400> 47  
Ile Glu Leu Asn Lys Ala Lys Ser Asp Leu Glu Glu Ser Lys Glu Trp  
1 5 10 15  
Ile Arg Arg Ser Asn Gln Lys Leu Asp Ser Ile Gly Asn Trp His Gln  
20 25 30  
Ser Ser Thr  
35

<210> 48  
<211> 35  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide

<400> 48  
Glu Leu Asn Lys Ala Lys Ser Asp Leu Glu Glu Ser Lys Glu Trp Ile  
1 5 10 15  
Arg Arg Ser Asn Gln Lys Leu Asp Ser Ile Gly Asn Trp His Gln Ser  
20 25 30  
Ser Thr Thr  
35

<210> 49  
<211> 35  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide

<400> 49

Thr Ala Ala Val Ala Leu Val Glu Ala Lys Gln Ala Arg Ser Asp Ile  
1 5 10 15

Glu Lys Leu Lys Glu Ala Ile Arg Asp Thr Asn Lys Ala Val Gln Ser  
20 25 30

Val Gln Ser  
35

<210> 50

<211> 35

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide

<400> 50

Ala Val Ala Leu Val Glu Ala Lys Gln Ala Arg Ser Asp Ile Glu Lys  
1 5 10 15

Leu Lys Glu Ala Ile Arg Asp Thr Asn Lys Ala Val Gln Ser Val Gln  
20 25 30

Ser Ser Ile  
35

<210> 51

<211> 35

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide

<400> 51

Leu Val Glu Ala Lys Gln Ala Arg Ser Asp Ile Glu Lys Leu Lys Glu  
1 5 10 15

Ala Ile Arg Asp Thr Asn Lys Ala Val Gln Ser Val Gln Ser Ser Ile  
20 25 30

Gly Asn Leu  
35

<210> 52  
<211> 35  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide

<400> 52  
Val Glu Ala Lys Gln Ala Arg Ser Asp Ile Glu Lys Leu Lys Glu Ala  
1 5 10 15

Ile Arg Asp Thr Asn Lys Ala Val Gln Ser Val Gln Ser Ser Ile Gly  
20 25 30

Asn Leu Ile  
35

<210> 53  
<211> 35  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide

<400> 53  
Glu Ala Lys Gln Ala Arg Ser Asp Ile Glu Lys Leu Lys Glu Ala Ile  
1 5 10 15

Arg Asp Thr Asn Lys Ala Val Gln Ser Val Gln Ser Ser Ile Gly Asn  
20 25 30

Leu Ile Val  
35

<210> 54  
<211> 35  
<212> PRT  
<213> Artificial Sequence

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<220>

<223> Description of Artificial Sequence: synthetic peptide

<400> 54

Ala Lys Gln Ala Arg Ser Asp Ile Glu Lys Leu Lys Glu Ala Ile Arg  
1 5 10 15

Asp Thr Asn Lys Ala Val Gln Ser Val Gln Ser Ser Ile Gly Asn Leu  
20 25 30

Ile Val Ala  
35

<210> 55

<211> 35

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide

<400> 55

Lys Gln Ala Arg Ser Asp Ile Glu Lys Leu Lys Glu Ala Ile Arg Asp  
1 5 10 15

Thr Asn Lys Ala Val Gln Ser Val Gln Ser Ser Ile Gly Asn Leu Ile  
20 25 30

Val Ala Ile  
35

<210> 56

<211> 35

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide

<400> 56

Gln Ala Arg Ser Asp Ile Glu Lys Leu Lys Glu Ala Ile Arg Asp Thr  
1 5 10 15



Asn Lys Ala Val Gln Ser Val Gln Ser Ser Ile Gly Asn Leu Ile Val  
20 25 30

Ala Ile Lys  
35

<210> 57  
<211> 35  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide

<400> 57  
Ala Arg Ser Asp Ile Glu Lys Leu Lys Glu Ala Ile Arg Asp Thr Asn  
1 5 10 15

Lys Ala Val Gln Ser Val Gln Ser Ser Ile Gly Asn Leu Ile Val Ala  
20 25 30

Ile Lys Ser  
35

<210> 58  
<211> 35  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide

<400> 58  
Arg Ser Asp Ile Glu Lys Leu Lys Glu Ala Ile Arg Asp Thr Asn Lys  
1 5 10 15

Ala Val Gln Ser Val Gln Ser Ser Ile Gly Asn Leu Ile Val Ala Ile  
20 25 30

Lys Ser Val  
35

<210> 59  
<211> 35  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide

<400> 59  
Ser Asp Ile Glu Lys Leu Lys Glu Ala Ile Arg Asp Thr Asn Lys Ala  
1 5 10 15  
Val Gln Ser Val Gln Ser Ser Ile Gly Asn Leu Ile Val Ala Ile Lys  
20 25 30  
Ser Val Gln  
35

<210> 60  
<211> 35  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide

<400> 60  
Lys Leu Lys Glu Ala Ile Arg Asp Thr Asn Lys Ala Val Gln Ser Val  
1 5 10 15  
Gln Ser Ser Ile Gly Asn Leu Ile Val Ala Ile Lys Ser Val Gln Asp  
20 25 30  
Tyr Val Asn  
35

<210> 61  
<211> 35  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide

<400> 61

Leu Lys Glu Ala Ile Arg Asp Thr Asn Lys Ala Val Gln Ser Val Gln  
1 5 10 15

Ser Ser Ile Gly Asn Leu Ile Val Ala Ile Lys Ser Val Gln Asp Tyr  
20 25 30

Val Asn Lys  
35

<210> 62

<211> 35

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide

<400> 62

Ala Ile Arg Asp Thr Asn Lys Ala Val Gln Ser Val Gln Ser Ser Ile  
1 5 10 15

Gly Asn Leu Ile Val Ala Ile Lys Ser Val Gln Asp Tyr Val Asn Lys  
20 25 30

Glu Ile Val  
35

<210> 63

<211> 47

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide

<400> 63

Thr Trp Gln Glu Trp Glu Arg Lys Val Asp Phe Leu Glu Glu Asn Ile  
1 5 10 15

Thr Ala Leu Leu Glu Glu Ala Gln Ile Gln Gln Glu Lys Asn Met Tyr  
20 25 30

005050 005050 005050

Glu Leu Gln Lys Leu Asn Ser Trp Asp Val Phe Gly Asn Trp Phe  
35 40 45

<210> 64

<211> 35

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide

<400> 64

Trp Gln Glu Trp Glu Arg Lys Val Asp Phe Leu Glu Glu Asn Ile Thr  
1 5 10 15

Ala Leu Leu Glu Glu Ala Gln Ile Gln Gln Glu Lys Asn Met Tyr Glu  
20 25 30

Leu Gln Lys  
35

<210> 65

<211> 35

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide

<400> 65

Gln Glu Trp Glu Arg Lys Val Asp Phe Leu Glu Glu Asn Ile Thr Ala  
1 5 10 15

Leu Leu Glu Glu Ala Gln Ile Gln Gln Glu Lys Asn Met Tyr Glu Leu  
20 25 30

Gln Lys Leu  
35

<210> 66

<211> 35

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide

<400> 66

Glu Trp Glu Arg Lys Val Asp Phe Leu Glu Glu Asn Ile Thr Ala Leu  
1 5 10 15

Leu Glu Glu Ala Gln Ile Gln Gln Glu Lys Asn Met Tyr Glu Leu Gln  
20 25 30

Lys Leu Asn  
35

<210> 67

<211> 35

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide

<400> 67

Trp Glu Arg Lys Val Asp Phe Leu Glu Glu Asn Ile Thr Ala Leu Leu  
1 5 10 15

Glu Glu Ala Gln Ile Gln Gln Glu Lys Asn Met Tyr Glu Leu Gln Lys  
20 25 30

Leu Asn Ser  
35

<210> 68

<211> 35

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide

<400> 68

Glu Arg Lys Val Asp Phe Leu Glu Glu Asn Ile Thr Ala Leu Leu Glu  
1 5 10 15

Glu Ala Gln Ile Gln Gln Glu Lys Asn Met Tyr Glu Leu Gln Lys Leu  
20 25 30

Asn Ser Trp  
35

<210> 69  
<211> 35  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide

<400> 69  
Arg Lys Val Asp Phe Leu Glu Glu Asn Ile Thr Ala Leu Leu Glu Glu  
1 5 10 15

Ala Gln Ile Gln Gln Glu Lys Asn Met Tyr Glu Leu Gln Lys Leu Asn  
20 25 30

Ser Trp Asp  
35

<210> 70  
<211> 35  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide

<400> 70  
Lys Val Asp Phe Leu Glu Glu Asn Ile Thr Ala Leu Leu Glu Glu Ala  
1 5 10 15

Gln Ile Gln Gln Glu Lys Asn Met Tyr Glu Leu Gln Lys Leu Asn Ser  
20 25 30

Trp Asp Val  
35

<210> 71  
<211> 35  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide

<400> 71  
Val Asp Phe Leu Glu Glu Asn Ile Thr Ala Leu Leu Glu Glu Ala Gln  
1 5 10 15  
Ile Gln Gln Glu Lys Asn Met Tyr Glu Leu Gln Lys Leu Asn Ser Trp  
20 25 30  
Asp Val Phe  
35

<210> 72  
<211> 35  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide

<400> 72  
Asp Phe Leu Glu Glu Asn Ile Thr Ala Leu Leu Glu Glu Ala Gln Ile  
1 5 10 15  
Gln Gln Glu Lys Asn Met Tyr Glu Leu Gln Lys Leu Asn Ser Trp Asp  
20 25 30  
Val Phe Gly  
35

<210> 73  
<211> 35  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide

<400> 73

Phe Leu Glu Glu Asn Ile Thr Ala Leu Leu Glu Glu Ala Gln Ile Gln  
1 5 10 15

Gln Glu Lys Asn Met Tyr Glu Leu Gln Lys Leu Asn Ser Trp Asp Val  
20 25 30

Phe Gly Asn  
35

<210> 74

<211> 35

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide

<400> 74

Pro Asp Ala Val Tyr Leu His Arg Ile Asp Leu Gly Pro Pro Ile Ser  
1 5 10 15

Leu Glu Arg Leu Asp Val Gly Thr Asn Leu Gly Asn Ala Ile Ala Lys  
20 25 30

Leu Glu Asp  
35

<210> 75

<211> 34

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide

<400> 75

Leu Glu Arg Leu Asp Val Gly Thr Asn Leu Gly Asn Ala Ile Ala Lys  
1 5 10 15

Leu Glu Ala Lys Glu Leu Leu Glu Ser Ser Asp Gln Ile Leu Arg Ser  
20 25 30



Met Lys

<210> 76

<211> 34

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide

<400> 76

Leu His Arg Ile Asp Leu Gly Pro Pro Ile Ser Leu Glu Arg Leu Asp  
1 5 10 15

Val Gly Thr Asn Leu Gly Asn Ala Ile Ala Lys Leu Glu Ala Lys Glu  
20 25 30

Leu Leu

<210> 77

<211> 34

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide

<400> 77

His Arg Ile Asp Leu Gly Pro Pro Ile Ser Leu Glu Arg Leu Asp Val  
1 5 10 15

Gly Thr Asn Leu Gly Asn Ala Ile Ala Lys Leu Glu Ala Lys Glu Leu  
20 25 30

Leu Glu

<210> 78

<211> 34

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide

<400> 78

Arg Ile Asp Leu Gly Pro Pro Ile Ser Leu Glu Arg Leu Asp Val Gly  
1 5 10 15

Thr Asn Leu Gly Asn Ala Ile Ala Lys Leu Glu Ala Lys Glu Leu Leu  
20 25 30

Glu Ser

<210> 79

<211> 34

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide

<400> 79

Ile Asp Leu Gly Pro Pro Ile Ser Leu Glu Arg Leu Asp Val Gly Thr  
1 5 10 15

Asn Leu Gly Asn Ala Ile Ala Lys Leu Glu Ala Lys Glu Leu Leu Glu  
20 25 30

Ser Ser

<210> 80

<211> 34

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide

<400> 80

Asp Leu Gly Pro Pro Ile Ser Leu Glu Arg Leu Asp Val Gly Thr Asn  
1 5 10 15

Leu Gly Asn Ala Ile Ala Lys Leu Glu Ala Lys Glu Leu Leu Glu Ser  
20 25 30

Ser Asp

<210> 81

<211> 34

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide

<400> 81

Leu Gly Pro Pro Ile Ser Leu Glu Arg Leu Asp Val Gly Thr Asn Leu  
1 5 10 15

Gly Asn Ala Ile Ala Lys Leu Glu Ala Lys Glu Leu Leu Glu Ser Ser  
20 25 30

Asp Gln

<210> 82

<211> 34

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide

<400> 82

Gly Pro Pro Ile Ser Leu Glu Arg Leu Asp Val Gly Thr Asn Leu Gly  
1 5 10 15

Asn Ala Ile Ala Lys Leu Glu Ala Lys Glu Leu Leu Glu Ser Ser Asp  
20 25 30

Gln Ile

<210> 83  
<211> 34  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide

<400> 83  
Pro Pro Ile Ser Leu Glu Arg Leu Asp Val Gly Thr Asn Leu Gly Asn  
1 5 10 15  
Ala Ile Ala Lys Leu Glu Ala Lys Glu Leu Leu Glu Ser Ser Asp Gln  
20 25 30  
Ile Leu

<210> 84  
<211> 34  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide

<400> 84  
Pro Ile Ser Leu Glu Arg Leu Asp Val Gly Thr Asn Leu Gly Asn Ala  
1 5 10 15  
Ile Ala Lys Leu Glu Ala Lys Glu Leu Leu Glu Ser Ser Asp Gln Ile  
20 25 30  
Leu Arg

<210> 85  
<211> 34  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: synthetic  
peptide

005050" EEE2960

<400> 85

Ser Leu Glu Arg Leu Asp Val Gly Thr Asn Leu Gly Asn Ala Ile Ala  
1 5 10 15

Lys Leu Glu Ala Lys Glu Leu Leu Glu Ser Ser Asp Gln Ile Leu Arg  
20 25 30

Ser Met

<210> 86

<211> 34

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic  
peptide

<400> 86

Leu Glu Arg Leu Asp Val Gly Thr Asn Leu Gly Asn Ala Ile Ala Lys  
1 5 10 15

Leu Glu Ala Lys Glu Leu Leu Glu Ser Ser Asp Gln Ile Leu Arg Ser  
20 25 30

Met Lys

005060" 005060"